

**Subject: last week**

**Date:** Tue, 26 Jan 1999 15:39:56 +0000 (GMT)

**From:** Steve Buckland <steve@dcs.st-and.ac.uk>

**To:** Tim Gerrodette <tim>

Tim, sorry for not giving you comments earlier - life is more hectic than usual at present.

1 or 2 thoughts on field methods.

1. tv's have MUCH wider esw's. There are various reasons for this - they ignore some of the smaller schools, and use helicopters and high resolution radar, and don't search in conditions too rough to make a set for example - but it seems to me worth thinking about why the difference for schools detected by big-eyes is so great. It can't surely be explained just by ignoring small schools and not searching in rougher conditions. If you could increase % of detections between say 2 and 5km, you could get better precision and fewer modeling problems. Possibly have an extra observer on a different platform with big-eyes? This could compromise comparability, but if you're estimating absolute abundance, this shouldn't be an issue.

2. I think you have problems of rounding with angles and/or reticle distances. There seems clear evidence of this in your data. I would be inclined to implement a 'delayed closing' mode for detections first made at larger distances - say >3km. Get an initial rough distance and angle in case they're not seen again, but then wait until the animals are continuously visible before getting an accurate distance and angle - and use the latter in analyses in preference to the former. This is OK provided you get the measurements before the animals respond to the vessel. The observers are sometimes obsessed with getting measurements corresponding to the time animals were first detected, at the expense of data quality. Nothing about the lt method requires this.

Analyses:

3. There is a strong case to trying to model covariates in your data. We have the methods to do this, though it'll be a year or 2 before they are in DISTANCE. Can't be done in 2 weeks!

4. The high resolution histograms you sent are plotted incorrectly - or at least the detection function is. The function is too high relative to the histogram in all plots. This may be partly because the function is scaled to one at the midpoint of the first interval, rather than at zero distance, but the error looks too large to be just this. Note that you can get high-resolution plots out of DISTANCE.

Feel free to ignore these comments!

Steve

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Stephen T. Buckland  
Mathematical Inst  
North Haugh  
St Andrews KY16 9SS

Professor of Statistics  
Tel. 01334-463787 (+44-1334-463787)  
Fax 01334-463748 (+44-1334-463748)  
e-mail [steve@mcs.st-and.ac.uk](mailto:steve@mcs.st-and.ac.uk)